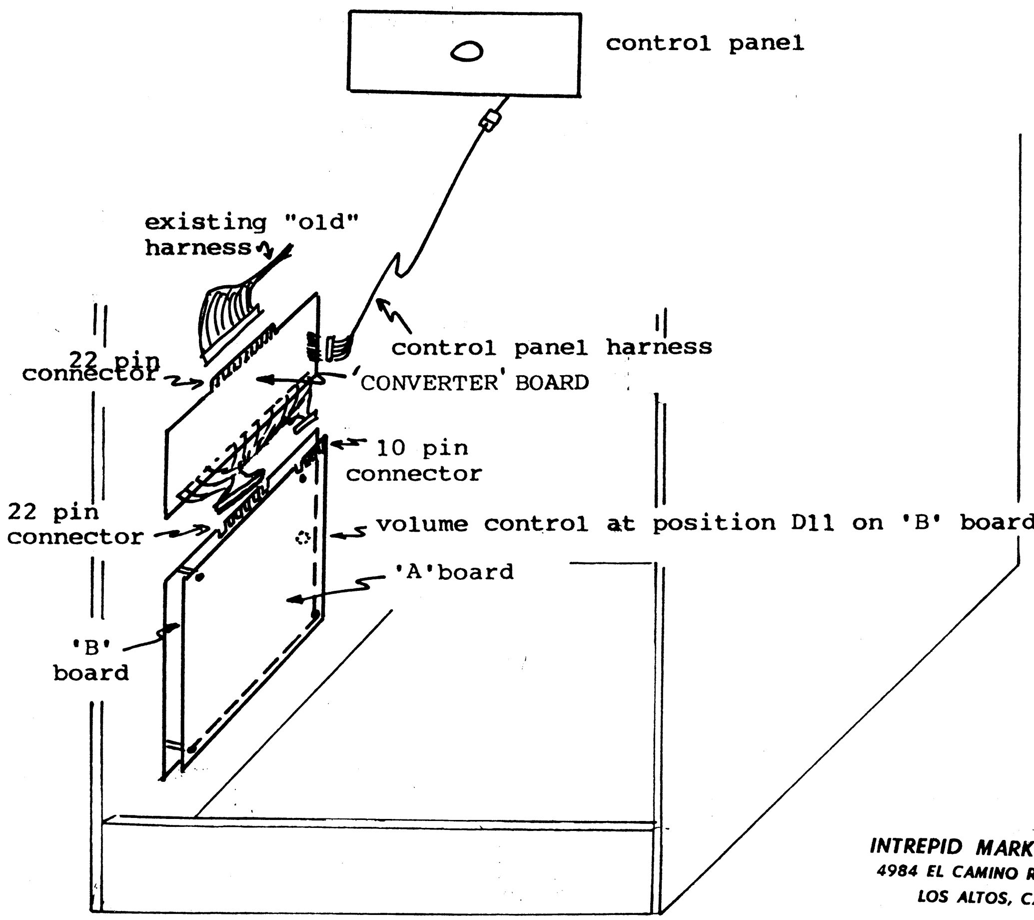
BEEZER

INSTALLING CIRCUIT BOARDS

1. Remove old circuit boards,save all mounting brackets.
2. Relocate upper brackets to fit larger boards.
3. Secure 'A' and 'B' boards to side of game.
4. Connect 'CONVERTER' board to 'A/B' boards as shown in diagram below.
5. Connect old main harness to 'CONVERTER' board as old set of boards you removed.
6. Assemble control panel and connect to 'CONVERTER' board at connector shown in diagram.

NOTE !!

The potentiometer on the 'CONVERTER' board is VOLTAGE ADJUSTMENT. PRE-SET AT FACTORY, TECHNICIAN ADJUST ONLY!!!
The potentiometer on 'B' board at D11 is VOLUME control



INTREPID MARKETING, INC.
4984 EL CAMINO REAL, STE. 217
LOS ALTOS, CA 94022

BEEZER

B. BOARD

SOLDERING SIDE					COMPONENT SIDE
+5V	(B1)	22	Z	(A1)	+5V
	(B2)	21	Y	(A2)	
+12V	(B3)	20	X	(A3)	
	(B4)	19	W	(A4)	GND
	(B5)	18	V	(A5)	
	(B6)	17	U	(A6)	
-5V	(B7)	16	T	(A7)	-5V
+12V	(B8)	15	S	(A8)	+12V
SPEAKER (+)	(B9)	14	R	(A9)	
	(B10)	13	P	(A10)	SPEAKER (-)
GND	(B11)	12	N	(A11)	GND
	(B12)	11	M	(A12)	-5V
	(B13)	10	L	(A13)	
PLAY 1 (DO TEST)	(B14)	9	K	(A14)	
PLAY 2 (SELECT TEST)	(B15)	8	J	(A15)	
COIN	(B16)	7	H	(A16)	
SLAM	(B17)	6	F	(A17)	
Y_3	(B18)	5	E	(A18)	X_3
Y_2	(B19)	4	D	(A19)	X_2
Y_1	(B20)	3	C	(A20)	X_1
Y_0	(B21)	2	B	(A21)	X_0
GND	(B22)	1	A	(A22)	GND

A. BOARD

SOLDERING SIDE				COMPONENT SIDE
GND	(1)	10	L	(1) GND
BLUE	(2)	9	K	(2)
GREEN	(3)	8	J	(3)
RED	(4)	7	H	(4)
	(5)	6	F	(5)
SYNC	(6)	5	E	(6)
	(7)	4	D	(7)
+12V	(8)	3	C	(8) +12V
-5V	(9)	2	B	(9) -5V
+5V	(10)	1	A	(10) +5V

NITE:

1. (A4) is the audio enable ground, should connect to (A11) or (A22).

2. Board A., board B. & mini track ball board's ground should connect together.

3. Mini track ball board's X_0 - X_3, Y_0 - Y_3 connect to board B.'s X_0 - X_3, Y_0 - Y_3.

4. Mini track ball board's X_A, X_B, Y_A, Y_B should connect to track ball, X_A, X_B are horezontal control, Y_A, Y_B are vertical control.

5. The audio amplifier is bridge output. Do not connect speaker to ground.

6. Audio level potentiometer is at position D11.

GALAXIAN (TO BEEZER)

GND	22	Z	GND
GND	21	Y	GND
	20	X	AC 12V
	19	W	AC 12V
AUDIO (+)	18	V	AUDIO (-)
SYNC	17	U	BLUE
GREEN	16	T	RED
GND	15	S	GND
	14	R	
	13	P	
	12	N	
	11	M	
	10	L	
SERVICE SW.	9	K	
	8	J	COIN SW.
JUMPER TOGETHER	7	H	COIN METER (-)
	6	F	
	5	E	COIN METER (+) (12V)
	4	D	AC 7V
	3	C	AC 7V
GND	2	B	GND
GND	1	A	GND

CONVERT BOARD TO CONTROL PANEL

1.	GROUND (BLACK)	TO MINI TRACK BALL BLACK WIRE.
2.	X_A (GREEN)	TO WICO TRACK BALL GREEN WIRE.
3.	X_B (YELLOW)	TO WICO TRACK BALL YELLOW WIRE.
4.	Y_A (PURPLE)	TO WICO TRACK BALL PURPLE WIRE.
5.	Y_B (BLUE)	TO WICO TRACK BALL BULE WIRE.
6.	GROUND (BLACK)	TO 1P, 2P SWITCH COMMON.
7.	1 PLAY (WHITE)	TO 1P SWITCH.
8.	2 PLAY (BROWN)	TO 2P SWITCH.
9.	+5V OUT (RED)	TO WICO TRACK BALL RED WIRE.
10.	+5V OUT (RED)	TO WICO TRACK BALL RED WIRE.
11.	SPARE (GRAY)	NOT USED.
12.	SPARE (ORANGE)	NOT USED.

TRACKBALL INTERFACE & COUNTER DRIVER.

		SOLDERING SIDE	B	A	COMPONENT SIDE	
		+ 5V	10	L	+ 5V	
		GND	9	K	GND	
		COIN METER	8	J	COIN OUT (CONNECT TO B BOARD B16)	
	(CONNECT TO B BOARD B18)	Y_3	7	H	X_3 (CONNECT TO B BOARD A18)	
	(CONNECT TO B BOARD B19)	Y_2	6	F	X_2 (CONNECT TO B BOARD A19)	
	(CONNECT TO B BOARD B20)	Y_1	5	E	X_1 (CONNECT TO B BOARD A20)	
	(CONNECT TO B BOARD B21)	Y_0	4	D	X_0 (CONNECT TO B BOARD A21)	
		SERVICE	3	C	COIN IN	
DOWN	(FROM TRACKBALL)	Y_B	2	B	X_B (FROM TRACKBALL)	RIGHT
UP	(FROM TRACKBALL)	Y_A	1	A	X_A (FROM TRACKBALL)	LEFT

* Voltage control potentiometer is preset-do not adjust!

ADJUSTMENT SWITCHES

A SET OF DIP SWITCHES ARE LOCATED ON THE GAME LOGIC BOARD TO ADJUST FOR COINS.

* NOTE: MAKE SURE POWER IS OFF BEFORE MAKING THESE ADJUSTMENTS.

SWITCH SETTING:

SWITCH B:

	1	2	3	4	5	6	7	8
1 COIN 1 CREDIT	OFF	OFF						
2 COIN 1 CREDIT	ON	OFF						
FREE PLAY	ON	ON						
3 BEEZER START			OFF					
4 BEEZER START			ON					
ATTRACT MODE SOUND ON				OFF				
ATTRACT MODE SOUND OFF				ON				
NO BONUS					OFF	OFF		
BONUS AT 90,000 POINTS					ON	ON		
BONUS AT 60,000 POINTS					OFF	ON		
BONUS AT 30,000 POINTS					ON	OFF		
EASY							OFF	OFF
MEDIUM EASY							ON	OFF
HARD							ON	ON
MEDIUM HARD							OFF	ON

SWITCH A:

NOT USED

INSTRUCTION FOR TEST MODE:

(1) To enter test mode:

(a) Power down

(b) Turn on while holding down 1P / 2P start switches

(2) Now in test mode. If not, repeat (1)(a) and (1)(b).

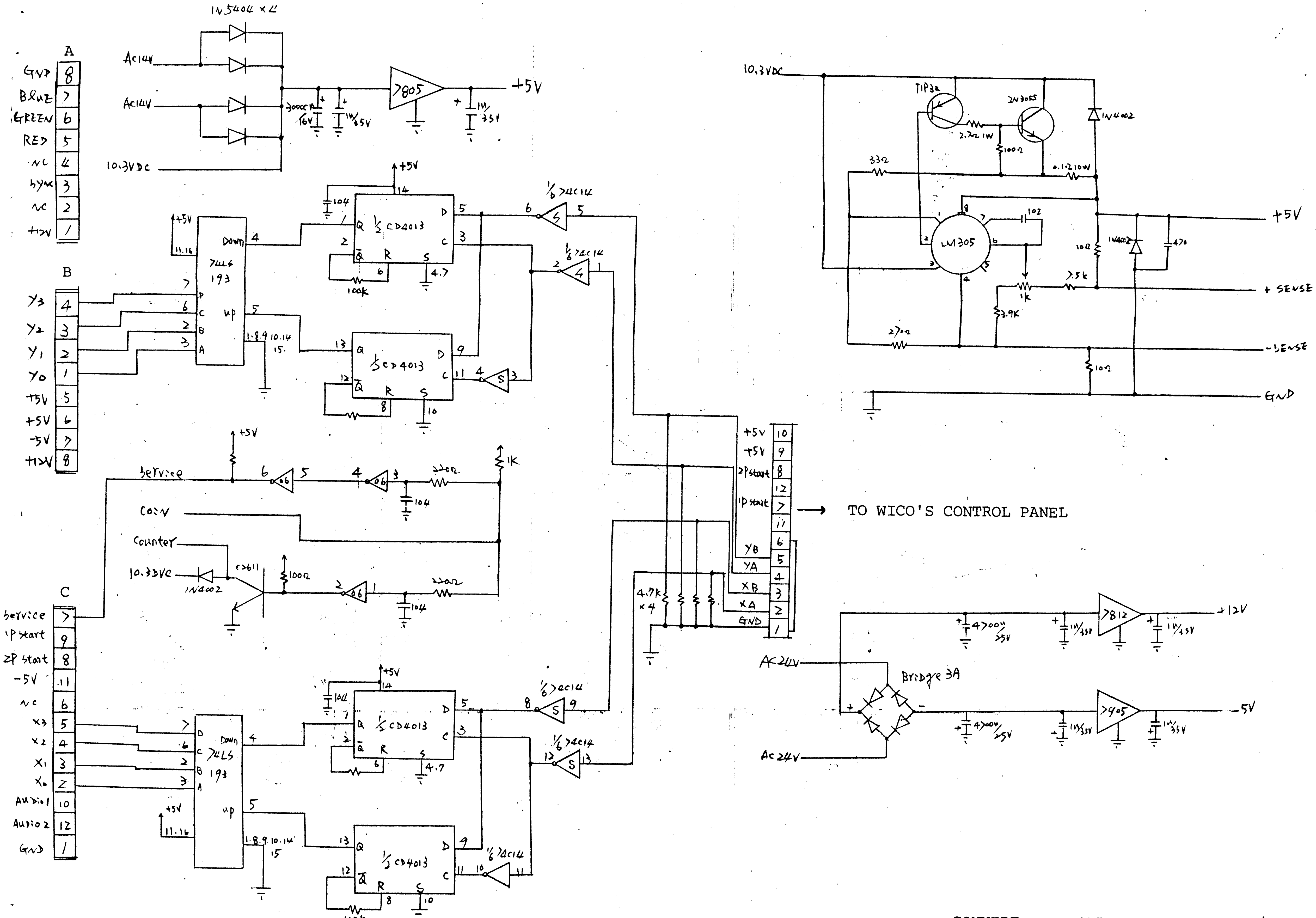
(3) Test manuel on screen:

(a) cycle to required item using 1P button

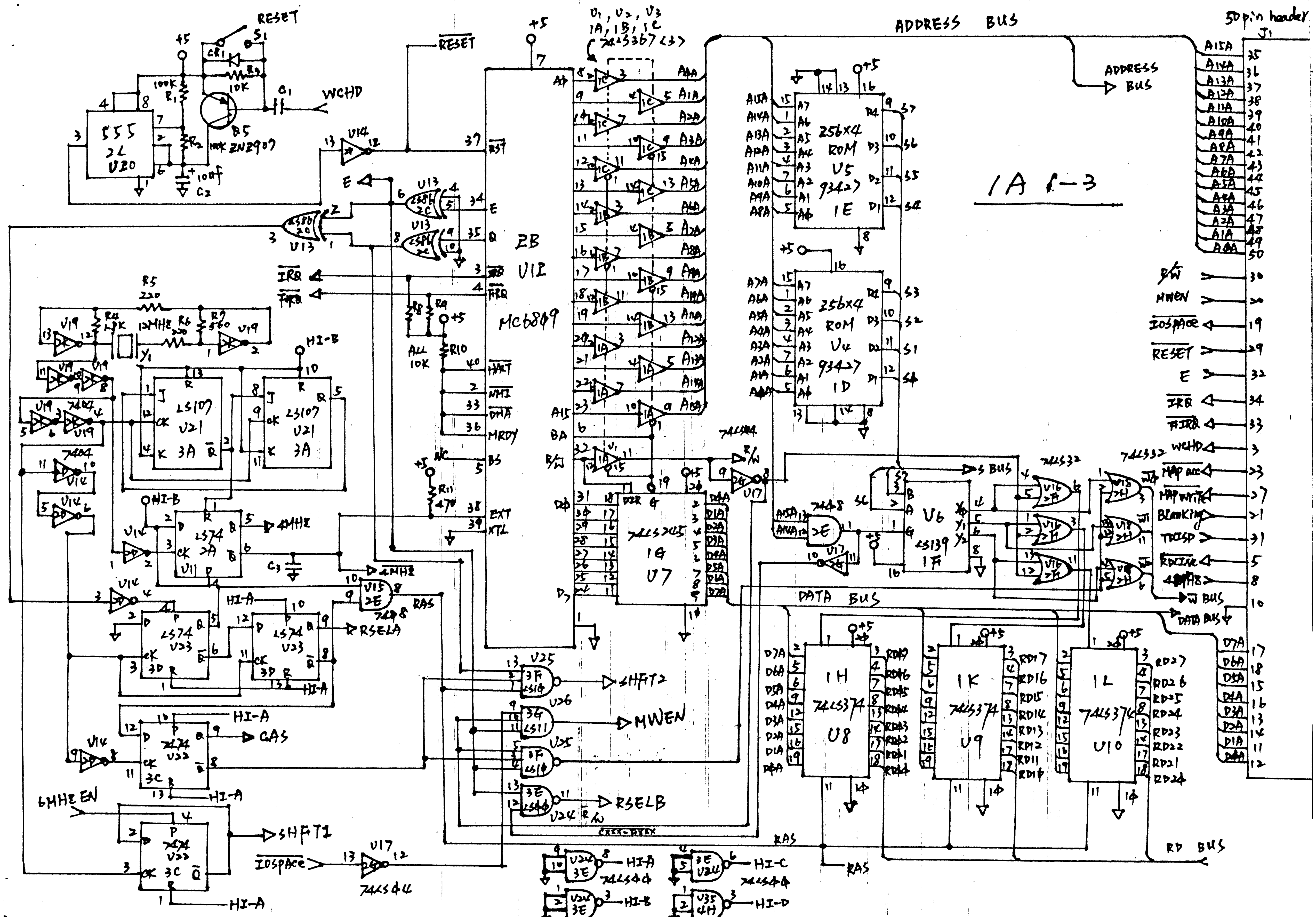
(b) enter specific test using 2P button

(c) cycle next test using 1P button

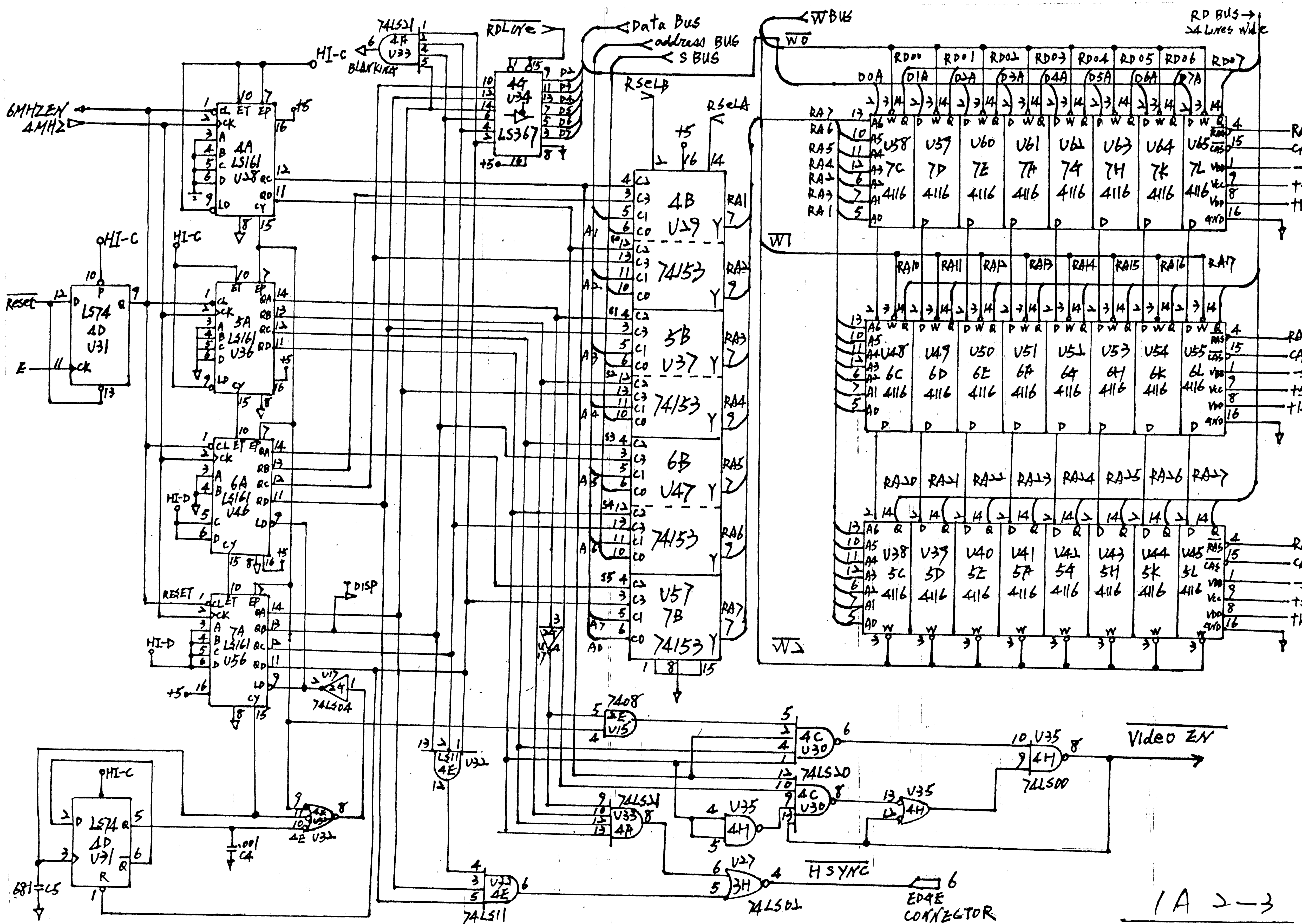
(d) leave test by cycling to start or turn off/on.



CONVERT BOARD

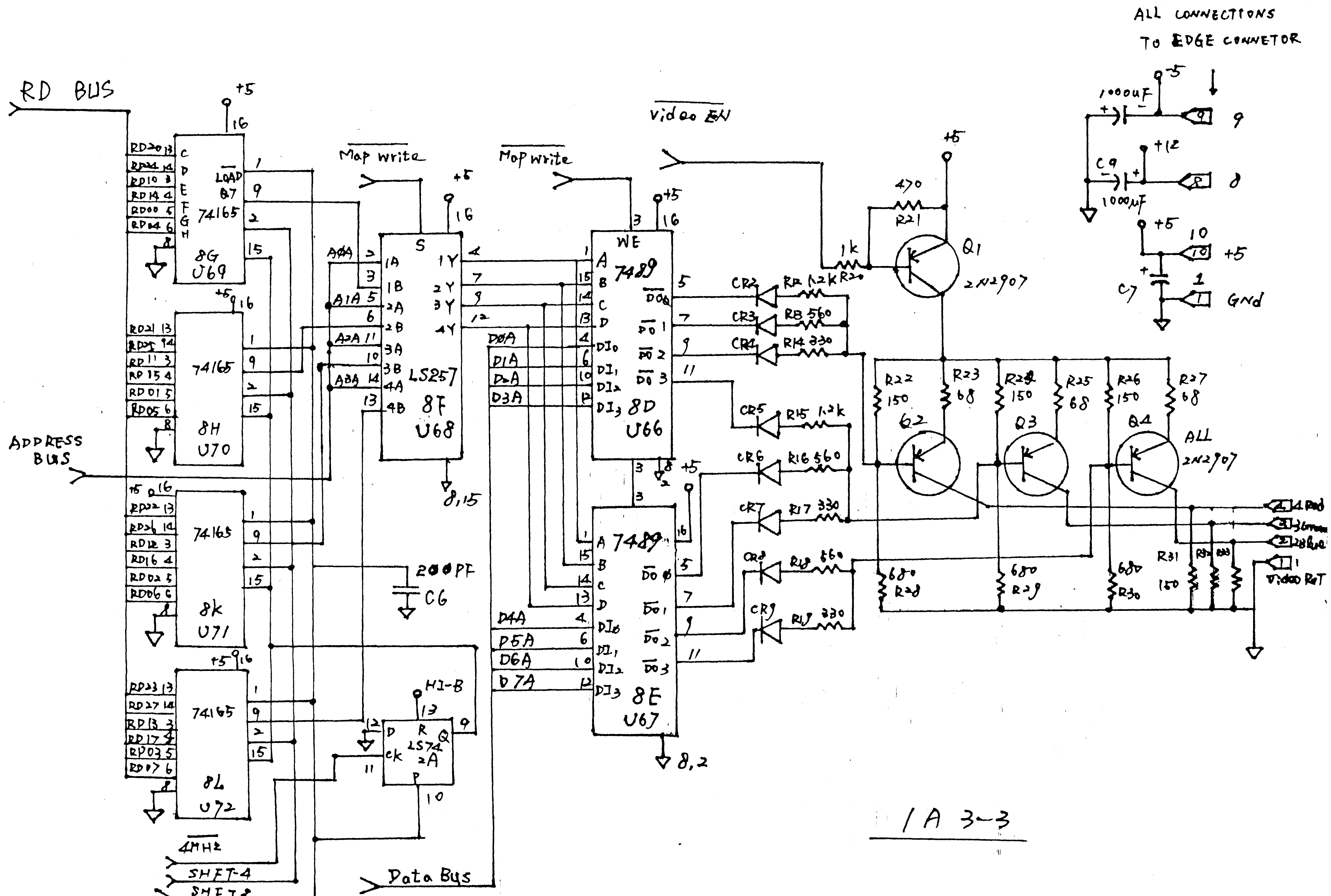


ADDRESS BUS
50 pin header
J1
1A 1-3
RESET
555
MC6809
2B
U12
256x4 ROM
93427
U5
1E
U4
1D
74LS245
U7
74LS139
1F
DATA BUS
74LS374
1H
U8
1K
U9
1L
U10
RD BUS
SHFT2
MWEN
RSELB
RSELA
CAS
SHFT1
IOSPACE
RAS
HI-A
HI-B
HI-C
HI-D
4MHZ
6MHZ EN
WCHD



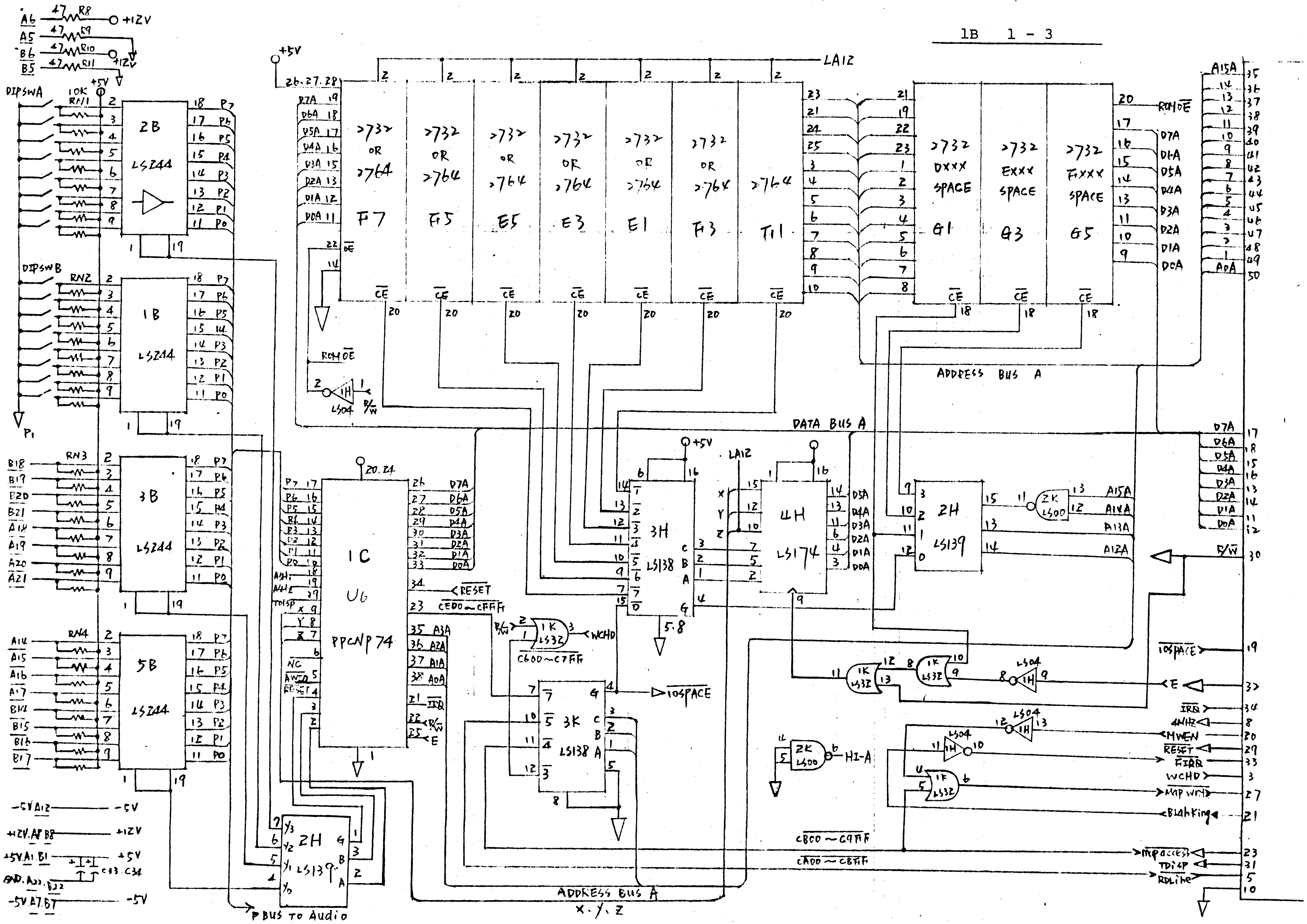
Data Bus
address BUS
S BUS
RDLINE
WBUS
WO
RD BUS
24 Lines wide
HI-C
BLANKING
6MHZEN
4MHZ
Reset
RSELB
RSELA
LS161
LS174
LS367
74153
4116
RAS
CAS
DISP
RESET
HI-D
74LS04
74LS11
74LS21
74LS20
74LS00
74LS02
7408
Video EN
HSYNC
EDGE CONNECTOR
W1
W2

1A 2-3

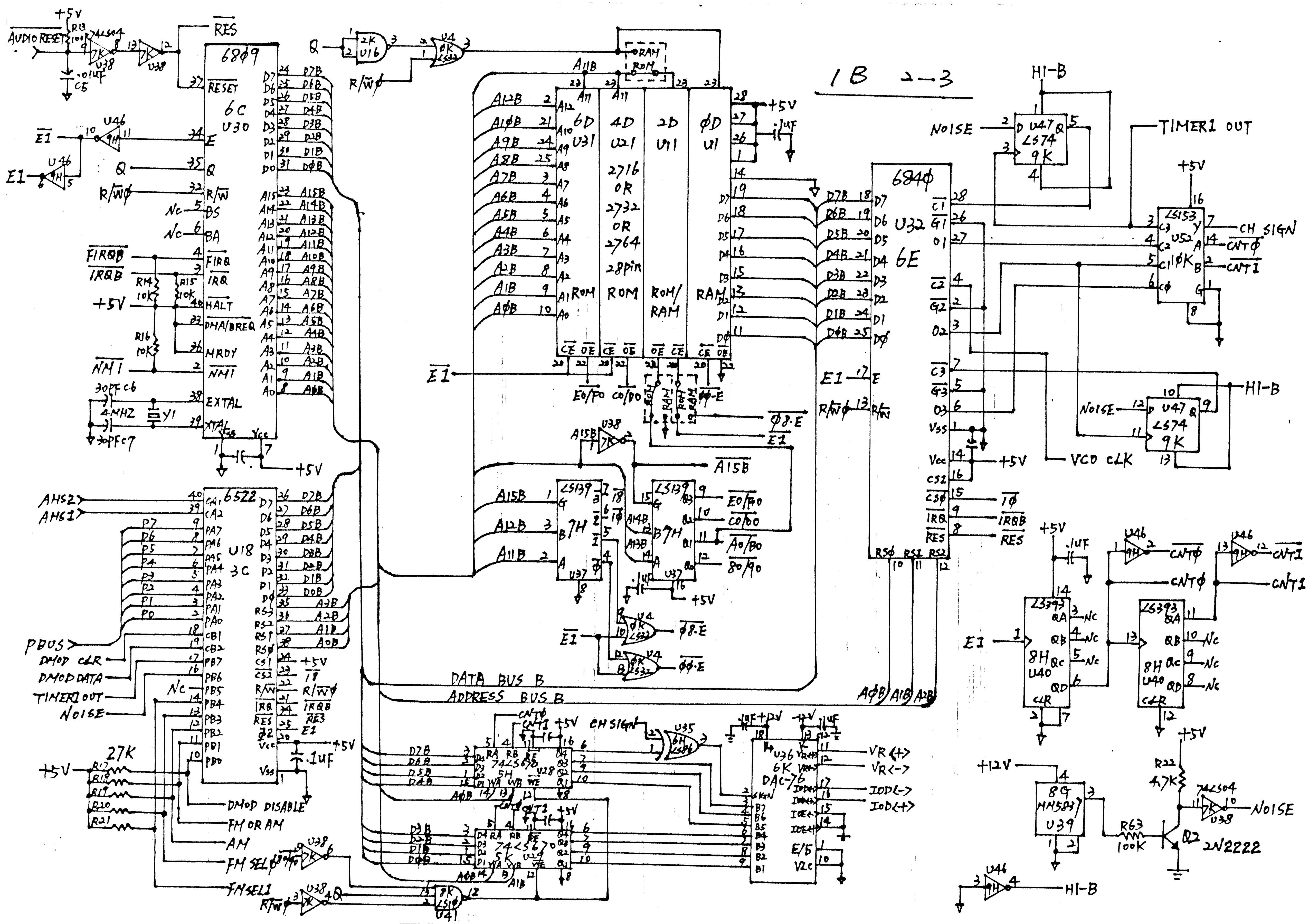

ALL CONNECTIONS
TO EDGE CONNETOR
RD BUS
ADDRESS BUS
Data Bus
Map write
Video EN
74165
8G
U69
LOAD
8H
U70
8K
U71
8L
U72
LS257
8F
U68
7489
8D
U66
8E
U67
WE
LS74
2A
200PF
C6
4MHz
SHFT-4
SHFT-2
H1-B
CR2
CR3
CR4
CR5
CR6
CR7
CR8
CR9
R21
470
1k
Q1
2N2907
Q2
Q3
Q4
ALL
2N2907
R22
R23
R25
R26
R27
150
68
680
R28
R29
R30
R31
1000uF
C9
C7
+5
+12
GND
Red
Video RET

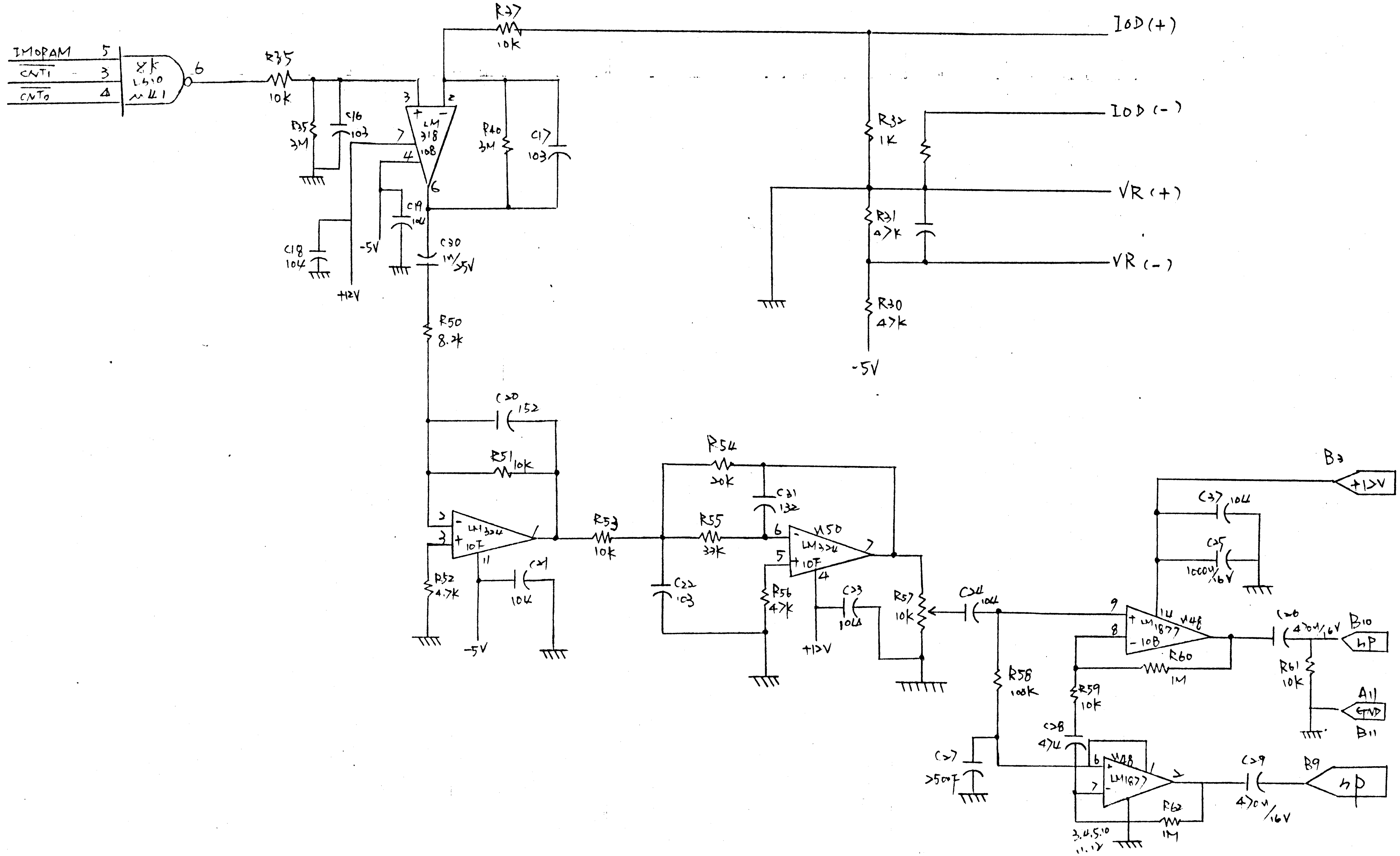
1A 3-3

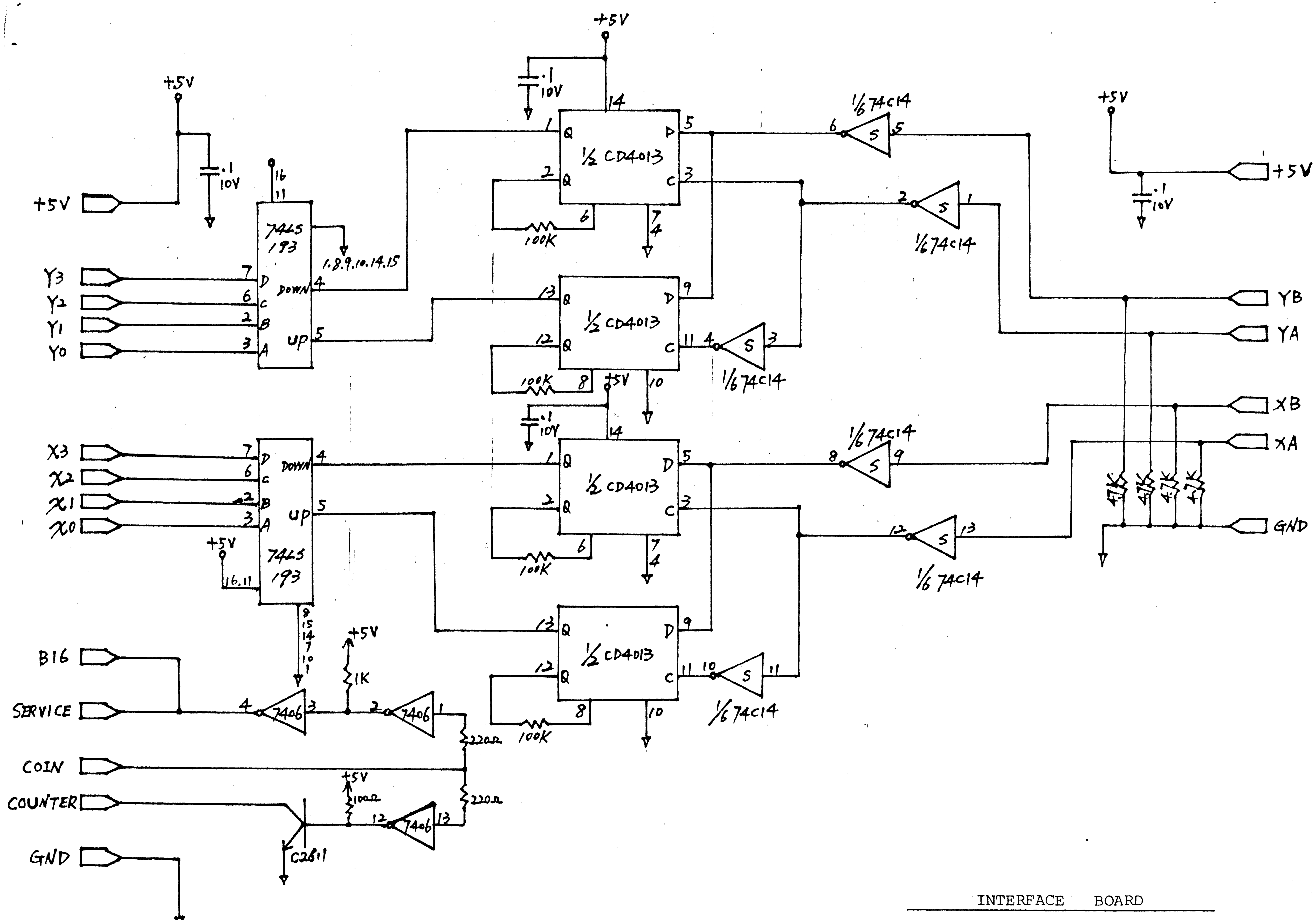
1B 1 - 3



DIPSWA
DIPSWB
2B
LS244
1B
3B
5B
RN1
RN2
RN3
RN4
+12V
+5V
LA12
2732 OR 2764
F7
F5
E5
E3
E1
F3
T11
2732 DXXX SPACE G1
2732 EXXX SPACE G3
2732 FXXX SPACE G5
ROM OE
ADDRESS BUS A
DATA BUS A
1C
U6
PPCNP74
RESET
CE00~CFFF
C600~C7FF
WCHD
3H
LS138
4H
LS174
2H
LS139
3K
IOSPACE
HI-A
IRQ
4MHz
MWEN
FIRQ
Map writ
Blanking
C800~C9FF
CA00~CBFF
Mpaccess
TDISP
RDline
ADDRESS BUS A
X. Y. Z
P BUS TO Audio
-5V
+12V
+5V
-5V
C33. C34


1B 2-3
AUDIO RESET
RES
6809
6C
U30
RESET
FIRQB
IRQB
NMI
EXTAL
XTAL
4MHZ
Y1
HALT
DMA/BREQ
MRDY
6522
U18
3C
PBUS
AHS2
AHS1
DMOD CLR
DMOD DATA
TIMER1 OUT
NOISE
DMOD DISABLE
FM OR AM
AM
FM SEL0
FM SEL1
27K
R/W̄ϕ
6D
U31
4D
U21
2D
U11
ϕD
U1
2716
OR
2732
OR
2764
28pin
ROM
ROM/RAM
RAM
E0/F0
C0/D0
ϕ8-E
ϕϕ-E
A15B
LS139
7H
U37
DATA BUS B
ADDRESS BUS B
6840
U32
6E
HI-B
U47
LS74
9K
TIMER1 OUT
LS153
U52
10K
CH SIGN
CNTϕ
CNT1
VCO CLK
LS393
8H
U40
CLR
74LS670
5H
U28
5K
U29
U35
6H
LS86
U36
6K
DAC-76
VR(+)
VR(-)
IOD(-)
IOD(+)
+12V
8G
MM5837
U39
R63
100K
R22
4.7K
74LS04
U38
Q2
2N2222
U41
8K
LS10
+5V
.1UF
NOISE


IMOPAM
CNT1
CNT0
R35 10k
R37 10k
IOD(+)
IOD(-)
VR(+)
VR(-)
R32 1K
R31 47K
R30 47K
-5V
R36 3M
C16 103
LM318
R40 3M
C17 103
C18 104
C19 104
C30
+12V
R50 8.2K
C20 152
R51 10K
LM324
R52 4.7K
R53 10K
R54 20K
C31
R55 33K
C22 103
R56 47K
C33
R57 10K
C34 104
+12V
C37 104
C25
LM1877
R60 1M
C36
R61 10K
B10
HP
A11
GND
B11
R58 100K
R59 10K
C38
C27
C29
B9
HP
R62 1M



INTERFACE BOARD